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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,693	05/24/2004	RYAN THOMAS BECHARD		3692

27390 7590 08/18/2006

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EXAMINER	
COCKS, JOSIAH C	

ART UNIT	PAPER NUMBER
3749	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/709,693	BECHARD, RYAN THOMAS	
	Examiner	Art Unit	
	Josiah Cocks	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed 6/12/2006 is acknowledged.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: During the course of prosecution applicant has included in the claims terminology that was not present as originally filed. This terminology includes the following:

- The terms: tier[s], displaced tier[s] or displaced planar tiers (e.g. claims 23, 24, and 35). These terms are considered to describe the relationship of the passageways (20, 30, and 40) with respect to one another as shown for instance in Fig. 2 and the segmented portions of the assembly (1) shown in Figs. 3-6. However, these terms have only be considered to show the structure and relationship of the passageways to the extent shown in the above noted figures.
- The term layered (e.g. claim 33). This term is considered to also describe the relationship of the passageways (20, 30, and 40) with respect to one another as shown for instance in Fig. 2 and the segmented portions of the assembly (1) shown in Figs. 3-6 and is considered to be commiserate in scope with the "tier" terms noted above.

- The phase, transects said second tier (e.g. claim 23, 24). This phrase is considered to describe the relationship of passageway (20) shown in Figs. 5 and 6 which shows that the passageway includes channel (25) that extends vertically from the base of the preheat device (1) through what would be the second tier that includes passages (30 and 32). However, this phrase has only be considered to show the structure and relationship of the passageways to the extent shown in the above noted figures.
- The terms; first cavity and second cavity (e.g. claims 23, 24, 27, 30, 33, 35, 36) and distal first cavity (e.g. claim 35). The terms "first cavity" and "distal first cavity" is considered to describe the channel (26) shown in Figs. 5 and 6. The term "second cavity" is considered to describe the space that receives a portion of nozzle (2) (illustrated at least in Figs. 2 and 4).

Applicant should amend the specification to include the claim terms noted above to identify the structures and relationships of applicant's invention in the manner noted by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 24, 26, 32, 33 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- Claim 24 now includes limitations that the first and second cavities are arranged to support either a nozzle with only an oil distribution port or a nozzle with an oil distribution port and an atomizing port and to selectively locate a nozzle with only an oil distribution port to block the second passageway. However, applicant disclosure describes only a single nozzle (2). There is no description of alternative nozzle arrangements or any variance in how the first and second cavities (note above how these cavities are interpreted above) receive the nozzle. Further, applicant's Figures only suggest that the nozzle (2) may block the first and second cavities and does not include any description of illustration of "only a an oil distribution port to block said second passageway" as recited in claim 24.
- Claims 26 and 35 each recite that the a riser portion that "transects a portion of said second passageway." However, neither applicant's specification nor figures disclose or describe that the riser portion (e.g. 25, Fig. 6) transects the second passageway. Fig. 6 only provides an illustration that the riser portion transects the second tier (note the discussion above relating to this phrase as understood to correspond to applicant's disclosure).
- Claim 33 recites that the riser portion "transects a portion of said third passageway." However, neither applicant's specification nor figures disclose or describe that the riser portion (e.g. 25, Fig. 6) transects the third passageway. Fig.

6 only provides an illustration that the riser portion transects the second tier (note the discussion above relating to this phrase as understood to correspond to applicant's disclosure).

- Claim 32 recites that a seal isolates heated oil from the second cavity. However, as best can be determined, no such seal is described or disclosed in applicant's specification or figures.
- Claim 33 recites that air admitted to the second cavity is sealed from oil admitted to the first cavity. However, as best can be determined, no such seal or sealing operation is described or disclosed in applicant's specification or figures.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 21-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,156,139 to Wilson Jr. ("Wilson") in view of U.S. Patent No. 2,976,918 to Leach ("Leach") and U.S. Patent No. 5,067,894 to Bender ("Bender").

Wilson discloses in the specification and Figs. 1-4 a method of operating an oil burner and an oil burner assembly in the same field of endeavor as applicant's invention and similar to that described in applicant's claims 21-39. In particular, Wilson shows an oil burner having a

manifold constructed of a thermally transmissive material (see abstract), first (22), second (14), and third (16) internal passageways, and a supported nozzle (8) having an oil distribution port and an atomizing port (see at least col. 2, lines 46-52). Source of oil and pressurized air are connected to the first (22) and third (16) passageways respectively and are arranged such that the air and oil are heated by a heating element arranged in the second passageway (14) (see col. 5, lines 47-48) before being discharged from the nozzle (8) (see at least col. 6, lines 28-42). The structural arrangement of the passageways, cavities and the nozzle ports are shown as recited in applicant's claims (see at least Figs. 1 and 2, and note cavities 22B and enlarged exit cavity of 22 and nozzle port 8).

In regard to the recitation of a seal isolating the heated oil (e.g. claims 32 and 33), passageway (22) carrying the heated oil in Wilson is considered to be sealed as recited (see at least col. 6, lines 10-27). Further, as the air

In regard to at least claims 23, 24, 33, and 35, as shown, particularly in Figs. 1 and 2, the passageways are considered to be arranged in tiers/displaced tiers/layers as recited. Each of the passageways, 16, 22, and 14 are separated from one another and accordingly considered to be located in separate tiers/layers. Further, the undulations of passageway (22) (described also as a controlled labyrinth, see col. 6, line 60), are considered to represent the convoluted and riser portions recited.

In regard to at least claim 24, as the nozzle (8) of Wilson is expressly noted to be moveable/removable (see col. 6, lines 48-50), the first and second cavities of Wilson are considered to arranged to selectively locate a nozzle as recited in this claim.

In regard to the limitations in the claims of a first passageway transecting a portion of a second passageway or a second tier (at least claims 23, 24, 30, and 32), these limitations are considered to be shown by the arrangement of air passageway (16) with fuel passageway (22) (see Fig. 1).

In regard to the recitation of a plurality of atomizing ports (e.g. claim 28), to have included additional atomizing ports would be simply a matter of duplicating the atomizing port of Wilson. This duplication would serve to provide the expected result of providing a duplicative effect of the atomizing of the port of Wilson and is not regarded to patentably distinguish applicant's invention. See MPEP 2144.04(VI)(B).

Wilson possibly does not explicitly show an igniter or step of igniting, a fan and oil pump arrangement, and does not show a source of heated liquid provided to the second passageway.

In regard to the recitation of an igniter and the step of igniting, the nozzle of Wilson is clearly indicated to create a flame (e.g. see abstract), however, there is no detail as to what effects the create of a flame. It is well understood in the art that ignition is provided for the nozzle of an oil burner via an igniter mounted adjacent the nozzle exit. Support for this assertion is found in the reference to Bender. Bender teaches an oil burner assembly in the same field of endeavor as both applicant's invention and Wilson. In Bender, the oil is ignited from a nozzle via an adjacent igniter (107). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the igniter of Bender in the burner of Wilson to desirably ignite the fuel and air mixture as it is sprayed from the nozzle (see Bender, col. 3, lines 21-23).

Bender also clearly shows the presence of a fan/turbine (108) and an oil pump (110). It would have been obvious to a person of ordinary skill in the art to modify the oil burner assembly of Wilson to incorporate a fan and oil pump as taught in Bender for the desirable purpose of providing the air and oil to the burner assembly under pressure (see Bender, col, 2, lines 53-55 and col. 3, lines 22-45).

In regard to claims 28 and 29, to have selected a specific spray pattern of the nozzle (i.e. conical or spiral) would be simply a matter of optimizing the spray pattern produced by nozzle of either Wilson or Bender. Bender in particular notes that the oil is providing in a helical distribution (see col. 4, lines 39). Such optimization is within the skill or one of ordinary skill in the art and would be accomplished through routine experimentation. See MPEP 2144.05(II)(A). Accordingly, these recitations in the claims are not regarded as patentably distinct.

In regard to the recitation in the claims of a source of heated liquid and step of providing the heated liquid to the second passageway. In Wilson, a passageway is shown that receives a heating element but does not go into further detail as to the particulars of this heating element. Leach teaches an oil burner assembly in the same field of endeavor as both applicant's invention and Wilson. In Leach, shows a device (10) for preheating heavy oil in a oil burning system (burner 100 and furnace 101) and method of preheating the oil that includes a body (12) made of thermally conductive material and includes an oil passageway (34, 39) and a liquid passageway (interior of housing 12) in which, heated in tank (67) is supplied via line (66). Oil passing through the oil passageways is heated in order to prevent the oil from becoming to too thick to properly flow to the combustion assembly (see col. 1, lines 18-47).

Therefore, in regard to claims 21-39 it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the oil heating device of Wilson to incorporate a heating means that includes a heating liquid as taught in Leach to desirably provide a oil preheating device that is simple in construction and efficient in operation (see Leach, col. 1, lines 43-47). Leach specifically notes that an adjacent electrical or gas heating unit (such as what appears to be present in Wilson) has a possible disadvantage of not being able to heat the oil uniformly (see Leach, col. 1, lines 27-35). Accordingly, a person of ordinary skill in the art would reasonably modify the heating element of Wilson to include a heated liquid passageway arrangement in the passageway structure (14) of Wilson to obtain the uniform oil heating benefit that, as noted above, is recognized in the art to be simple in construction and efficient in operation.

Response to Arguments

7. Applicant's arguments filed 6/12/2006 have been fully considered but they are not persuasive.

Applicant argues that Wilson discloses only the use of an electric heater. The examiner does not agree. As noted above, Wilson describes broadly the use of a "heating element" in passage (14) but does not limit this heating element to only an electric heater as asserted by applicant.

Further, the examiner has admitted that the "heating element" of Wilson does not suggest a heated liquid passageway as claimed by applicant. However, the examiner has turned to the teachings of Leach to supply the deficiency. As noted above, Leach discloses an oil heating

device in the same field of endeavor as Wilson and includes passageways that receive oil, air, and a heated liquid (water). Leach further provides a clear suggestion that the use of the liquid heated passageway is a improvement over typical prior heating arrangements that include an electric or gaseous heater to heat the oil (such as in Wilson). Applicant appears to argue that the liquid heated passageway of Leach could not be bodily incorporated into the manifold of Wilson. However, the examiner notes that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, combined teaching of Wilson and Leach suggest that in an oil burner assembly a person of ordinary skill in the art would reasonably consider that a liquid heated passageway (such as a that of Leach) would be substituted for a gas or electric heating element (such as that of Wilson) to provide for uniform heating of the fuel oil.

Applicant also appears to argue that the oil preheating assembly of Leach only suggests a displaced liquid preheater assembly. However, in response the examiner notes that the claims have been rejected, at least in part, on the combined teachings of Wilson in view of Leach and not on Leach alone. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the examiner considers that Wilson shows an oil burner assembly that is similar to that disclosed by applicant. As noted above, the assembly in Wilson includes a

manifold with an air passageway, an oil passageway, and a passageway that receives a heating device. The heating device is specifically noted to be within the manifold/block (20) (see Wilson, col. 5, line 48) and is specifically intended to heat the air and fuel prior to reach the nozzle (8) (see Wilson, col. 6, lines 38-43). Turning to Leach, the examiner considers that the preheating assembly (10) is analogous to the manifold of Wilson in that it includes a housing (12) with an interior air passageway, oil passageway, and a heating passageway that receives a heated liquid in order to heat both the oil and air passageways (see Leach, at least col. 2, lines 28-70). The examiner considers that taken together, these references would reasonably suggest to a person of ordinary skill in the art to modify the heating element passageway of Wilson (item 14) to incorporated a liquid heating passageway as taught in Leach as the arrangement of such a liquid heating passageway in relationship to an oil and air passageway provides for a uniform heating of the oil. This uniform heating of oil provided by an interior liquid heating passageway being a recognized benefit over the use of a gas or electric heating element, such as that shown in Wilson, which causes the oil to become undesirably thick (see Leach, col. 1, lines 18-34).

Applicant also appears to suggest that the teachings of Bender have been misapplied, stating;

> "Bender is cited for showing an igniter 107, a fan/turbine 108, and oil pump 110 which the examiner conveniently combines with Wilson and/or Leach to and argues obviates applicant's claims." (applicant's response, p. 11)

It is unclear from this statement is applicant is asserting that the igniter, fan, and oil pump recited in applicant's claims patentably distinguish applicant's invention. However, the examiner notes that each of these elements identified are present in Bender, which is analogous art to applicant's invention. Further, these elements provide the identical expected functionality as the

corresponding elements of applicant's claims. Accordingly, Bender is considered to properly teach that for which it has been cited.

Accordingly, applicant's claims 21-39 are not considered to patentably distinguish applicant's invention over the prior art of record.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on weekdays from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcc
August 16, 2006

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